61. Ardea sumatrana, Raffles.

62. Herodias alba, L.
H. torra (B. Ham.), Meyer, op. sup. cit.

63. Demigretta sacra, Gm.

64. Nycticorax caledonicus, Gm.

65. Porphyrio melanopterus, Temm.

VIII. NATATORES.

66. Nettapus pulchellus, Gould.

67. Dendrocygna guttata, Müll.

68. Tadorna radjah, Garn.

69. Onychoprion anæsthetus, Scop.

8. On some New and Little-known Species of Butterflies of the Genus *Teracolus*. By Lt.-Col. C. Swinhoe, F.L.S., F.Z.S.

[Received June 14, 1884.]

(Plates XXXIX. & XL.)

The Butterflies of the genus *Teracolus* of which this paper treats are very rare in collections; even the National collection contains but a poor lot of Asiatic specimens. The insects are of a very delicate nature, very difficult to capture without injury, and consequently many of the few specimens to be found in collections are represented by mere fragments.

These beautifully coloured delicate insects are, in the few species yet known, so much like one another, that many lepidopterists are inclined to club them together, and this more particularly with reference to the different species in the groups of *Teracolus faustus*, *T. danaë*, and *T. vestalis*, and indeed, until the appearance of Mr. Butler's revision of the genus in our 'Proceedings' in January 1876, the whole *T. vestalis* group, a perfectly distinct group of which there are many species, appear to have been looked upon as the females of *T. phisadia* of Godart. The only four species of the *T. vestalis* group yet described have been described by Mr. Butler.

The real home of this genus is the sandy desert, and it is a most extraordinary fact that, the worse the locality, where nature is a barren wilderness of nothing but intense heat and sand, the more beautiful are the species to be found there, many of them having patches of most brilliant golden orange—regular sun-patches, just as if these patches had been burnt into their wings by the sun.

I have here referred to and described 22 species in all, 16 of

R. Mintern del et lith.

Mintern Bros. imp.

SPECIES OF TERACOLUS.

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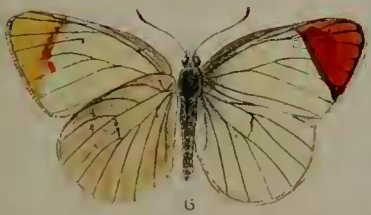

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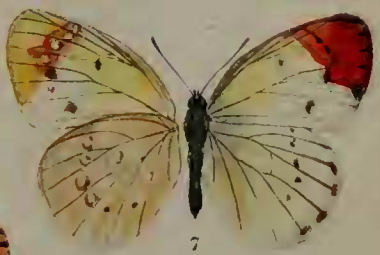

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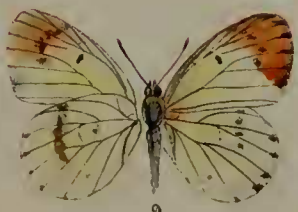

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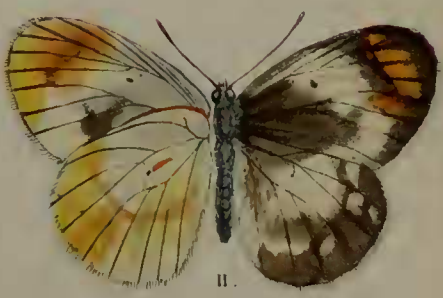

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R. Mintern del et lith.

Mintern Bros. imp.

SPECIES OF TERACOLUS

which are new to science and the others very rare; four African, and the rest Asian. Four belong to Mr. Butler's 5th group, all Arabian; the centre of the wings containing sun-patches. Of these *T. halimede*, Klug, is the type; the females vary much in the ground-colour of the wings, and many are albinos. Three belong to Mr. Butler's 6th group, type *T. faustus*, Olivier; two Indian, one Arabian. The females of this group also vary very much in the ground-colour of the wings, and many are albinos. Five belong to Mr. Butler's 7th group, of which there are two types—*T. vestalis*, Butler, and *T. amatus*, Fabr.; three Indian and one Arabian of the first, and one Indian of the second. Five belong to the 8th group, of which there are also two types—*T. interruptus*, Butler, and *T. liagore*, Klug; three African and one Arabian of the first, and one Arabian of the second. Four belong to the 9th group, type *T. danaë*, Fabr., all Indian. One to a type between Mr. Butler's 9th and 10th groups —an African, having the shape and general appearance of the former, and the orange patch of the latter.

Group 5. Type *Teracolus halimede*, Klug.

1. Teracolus cœlestis, n. sp. (Plate XXXIX. ♂ ♀, f. 1 & 2.)

Near *T. halimede*, Klug.

Aden, February and March, May to July.

♂. Above white. Fore wings with basal third and basal half of costa irrorated with bluish grey; band from centre of costa round the apical margin to centre of outer border greyish brown, forming a small apical patch, and fining down gradually both ways; a small band of same colour half across the apical space from the costa, differing in size in different specimens, and sometimes joining the apical band in the middle, forming a large subapical white spot; a deep black transverse streak at end of cell; all the veins greyish brown; and the whole space below the median nervules from the basal irrorations outwards brilliant orange.

Hind wing with a deep band of same colour in the costa, covering the whole space above the subcostal nervule, sometimes extending into the next interspace below, but not into the cell; remainder of hind wing pure white, and unmarked.

Below milky white, with the apex of fore wings and costal portion of hind wings suffused with pale orange.

♀. Above bright primrose colour. Fore wings with the basal third, costal border, and a deep marginal diffused band grey, a largish grey spot at end of cell, seven grey spots across the disk, and the lower half of the wing more or less covered with bright orange colour. Hind wings with the same colour on the costal portion, otherwise quite unmarked.

Below pale primrose; fore wings brighter than the hind wings, with the irrorations on the basal third, the spot at end of cell, and the discal spots showing through the wing.

Hind wings with a faint indication of a discal series of spots.

The above is the normal type; some of the females have a fain

marginal row of spots on the veins on the hind wings above; they vary much in the ground-colour of the wings, and many are albinos.

This is a very distinct species, and though allied to, is quite distinct from, *T. halimede*, Klug, more especially in the female.

Expanse of wings, ♂ $1\frac{8}{10}$ inch, ♀ 2 inches.

In coll. C. Swinhoe.

2. Teracolus leo, Butler (Plate XXXIX. ♂, f. 3), Ann. Nat. Hist. ser. 3, vol. xvi. p. 397 (1865), though standing in his revision, P. Z. S. 1876, p. 133, as a synonym to *T. halimede*, is also, I believe, a distinct species. Mr. Butler's type came from the White Nile, and I have another identical with his type from Harkeko, and in both the apex and outer border are nearly colourless and very different from both Klug's plate or description of *T. halimede* (which comes from Arabia) and from mine. Probably a still greater difference will be found in the female when it is discovered. I give figures of all three.

In coll. B. M.

3. Teracolus pleione, Klug, Symb. Phys. pl. 8, figs. 7, 8 (1829).

Aden, December to May.

Of this very rare species I have a series from Aden. The coloration in Klug's plate is very bad, and gives no idea of this very beautiful insect.

The females vary very much in colour—some are bright orange, some pale, and some pure albinos.

4. Teracolus miriam, Felder, Reise der Nov., Lep. ser. 2, p. 190, n. 186, pl. 27. figs. 3, 4 (1865).

Aden, December to March.

This is put in Mr. Butler's revision as a synonym to the preceding species, but it is undoubtedly quite distinct. It differs in both sexes in having no border whatever to the hind wings, and in this important character there is no variation in the twenty examples before me.

In coll. C. Swinhoe.

Group. 6. Type *Teracolus faustus*, Olivier.

5. Teracolus faustus, Olivier, Voy. dans l'emp. Ott., l'Egypte et la Perse, Atlas, pl. 33. figs. 4, *a*, *b*. (1801).

T. faustina, Felder, Reise Nov., Lep. ii. p. 190, n. 187 (1865).

T. oriens, Butler, P. Z. S. 1876, p. 134, pl. vii. fig. 7.

I think both *T. faustina* and *T. oriens* must be taken out of the list of *Teracoli* and must become synonyms of *T. faustus*. I have examined the types with the assistance of Mr. Butler, and have compared them with a long series of *T. faustus*.

Mr. Butler's type of ♀ *T. oriens* is undoubtedly the normal type of female *T. faustus*, of which I have several.

The male described by Mr. Butler, and the male of *T. faustina* described by Felder, in no way differ from many specimens of *T. faustus*.

A species ranging through Persia and Afghanistan, Sind, and the North-west of India, shows naturally some slight differences in appearances, although, considering its wide distribution, it is wonderfully constant, as is almost every species of this peculiar genus.

6. Teracolus solaris, Butler, P. Z. S. 1876, p. 135. (Plate XXXIX. ♀, f. 5.)

Deesa, Rajpootana.

The female of this species has been hitherto unknown.

♀. General colour dull orange salmon-colour, base irrorated with black-brown. Fore wings with the irrorations running along the costa to the apical patch, large spot at the end of the cell, costa, and apical patch black-brown, the patch continued broadly along the outer border, gradually lessening to the hinder angle, containing seven longitudinal small marginal spots and six larger submarginal spots of the ground-colour, but paler on the veins, and one diffuse brown spot standing out by itself in the interno-median interspace.

Hind wings with a deep macular black-brown border, with the discal band below showing through.

Below pale ochreish flesh-colour. Fore wings brighter and more orange-coloured towards the base; spot at end of cell large, brown with white centre; band across apex reddish brown, ending in a black-brown square spot on the second median interspace, with another square spot of same colour in the space below, disconnected, and more inside the wing.

Hind wing—spot at end of cell and discal band reddish brown; fringe of both wings of same colour.

The above is the normal type, but the ground-colour of the females of this species, as in *T. faustus*, varies very much, some being very pale, and some pure white.

This species is marked by Mr. Butler in his revision of the genus as from "Scinde?," but it never could have come from Sind. I have taken many at Deesa, and the species belongs to Rajpootana; and I may here remark that *T. fulvia*, Wallace, belongs to the Deccan, to Madras, and the south of India, and not to the North-west as therein stated. I have many specimens taken at Poona, and a pair of the variety *T. tripuncta*, Butler, taken at Madras, and Mr. Moore has some from the same locality.

Expanse of wings 2 inches.

In coll. C. Swinhoe.

7. Teracolus vi, n. sp. (Plate XXXIX. ♂ ♀, figs. 6 & 7.)

Aden, July and August, 1883.

♂. Wings above coloured and marked like *Teracolus faustus*, Olivier; the orange colour above is, however, brighter and different

from any of the species yet described, the embossed spot on the internal area of the fore wings, peculiar to this group, is also very distinct, and the transverse spot at the end of the cell is small and pale.

Below, the general colour of both wings is pale orange-yellow, with the inner border of the apex of the fore wings showing through the wing, and a faint shade of a discal band on the hind wings; otherwise both wings are immaculate.

♀. Above, ground-colour darker and yellower than the males, irrorations at the base, the spot at end of the cell of fore wings, and the black-brown markings on both wings generally paler and broader.

Below, it has the general appearance of the male, but slightly darker, with the addition of two pale-brown spots in the interno-median interspace.

Expanse of wings, ♂ ♀ $2\frac{1}{10}$ to $1\frac{8}{10}$ inch.

This is a very distinct species.

In coll. C. Swinhoe.

Group 7. Type *Teracolus vestalis*, Butler.

8. Teracolus rorus, n. sp. (Plate XXXIX. ♂, fig. 8.)

Sukkur (North Sind), February 1882.

♂ ♀. Resemble on both surfaces the female of *T. puellaris*, Butler, even to the third spot near the outer margin below being extended downwards and expanding upon the inner margin, differing not only in this from *T. ochreipennis* and *T. intermissus* (of which I have many examples), but is larger, and the outer border of secondaries is much darker and deeper, fines down a little, and stops short of the anal angle. I have examined a long series taken at the same time and place.

Expanse of wings, ♂ ♀ $1\frac{5}{10}$ to $1\frac{7}{10}$ inch.

In coll. C. Swinhoe.

As this group, of which *T. vestalis* is the type, is very indifferently understood, it might be as well to give their distinctive characteristics, which apparently never vary, and by which each of the following species can readily be identified:—

T. vestalis, Butler. Below, both sexes, both wings sulphur-yellow, fore wings with three black spots near outer margin below the median branches, the centre one the largest.

T. ochreipennis, Butler. Below, both sexes with the three spots on the fore wings as in *T. vestalis*; hind wings in *both sexes* flesh-colour, marginal border of the hind wings above unmarked and like *T. vestalis*.

T. intermissus, Butler, P. Z. S. 1883, p. 152, pl. xxiv. fig. 4. Similar to *T. ochreipennis* below; above, the marginal band of the hind wings is narrow and wavy.

T. puellaris, Butler. Below, fore wings with the lowest of the three spots extending downwards and expanding upon the inner margin in both sexes.

♂. Both wings below sulphur-yellow.

♀. Fore wings below sulphur-yellow, hind wings flesh-colour.

T. rorus, C. Swinhoe. Below, both sexes with the spots in the fore wings as in *T. puellaris*; *both sexes* with the hind wings flesh-colour.

I think *T. intermissus* is a doubtful species, but the other four are quite distinct and easy to distinguish.

9. Teracolus peelus, n. sp. (Plate XXXIX. ♂, fig. 9.)

Kurrachee, May and September.

♂ ♀. Bright sulphur-yellow above. Fore wings with a broad irregular marginal black-brown border; three sulphur-yellow spots placed obliquely below and lessening in size from the apex, a third much larger spot on the second median interspace, a small dot below this spot, and a diffuse slightly smaller spot near the hinder angle, in some specimens running into the angle and cutting the outer border shorter at the submedian nervule; seven pale-yellow dots on the margin, the last two close together, near the hinder angle; costal margin greyish yellow, in some specimens with a tinge of flesh-colour; a large black spot at the end of the cell; the basal half of the subcostal area, discoidal cell (excepting its inferior angle), and the base of the interno-median area black-brown. Hind wings with the black border exactly like *T. intermissus*.

Under surface of wings sulphur-yellow, with the costa, apex, and outer border flesh-colour, with the spots arranged as in *T. vestalis*. Hind wings flesh-colour, a distinct dark spot at the end of the cell, and a few faint discal spots limiting the outer border, which is distinctly visible through the wing.

Expanse of wings, ♂ ♀ $1\frac{8}{10}$ to 2 inches.

In coll. C. Swinhoe.

10. Teracolus dubius, n. sp.

Kurrachee, July and September.

♂. Like *T. vestalis*, Butler, but has altogether a different appearance. Above, the suffused black patch from the base runs right into the very large spot at the end of the cell, and continues along the costa in a uniform band until it runs into the outer marginal band; this band on both wings being much deeper than is usual in the groups.

Below, the general ground-colour is dirty primrose, the apex of the fore wings and the whole surface of the hind wings are tinged with flesh-colour; spots on the fore wings arranged as in *T. vestalis*, but much larger. Hind wings with a dot at the end of the cell, and a discal series of seven large reddish-brown spots, the fourth being much the largest.

Expanse of wings, $1\frac{9}{10}$ inch.

In coll. C. Swinhoe.

11. Teracolus phisadia, Godart, Enc. Méth. ix. p. 132, n. 40 (1819).

Is identical with *T. arne*, Klug, Symb. Phys. t. 7. f. 1–4 (1829).

Aden, January and February.

This rare species is the common form of this group at Aden, and I have a good many examples of both sexes: some of the females are yellow, some white, all more or less suffused with pale pinkish salmon-colour.

Group *7a*. Type *Teracolus amatus*, Fabr.

12. TERACOLUS KENNEDII, n. sp.

Ahmednuggur, November 1883.

♂. Fore wings marked like *T. modestus*, Butler. Differs in having the black band round the wings much narrower and the spot on the interno-median interspace disconnected from the marginal band. Hind wings, above, a deep black band on the costa for two thirds of its length from the base, a black marginal border, and three submarginal black spots connected with the border by black irrorations, which also continue broadly up the inner margin, and four marginal salmon-coloured dots in the band. Below, it is identical with *T. modestus*.

♀. Marked above somewhat like the male, but the submarginal black spots on the hind wings are joined together, doubling the depth of the border, which has four marginal salmon-coloured dots and five large submarginal spots of the same colour; and the costal black band of the male is altogether absent.

Below, it is primrose-colour, with the apex of the fore wings and the whole surface of the hind wings suffused with salmon-colour; a large white-centred black spot at the end of the cell of each wing, larger in the fore wings; a whorl of seven black spots in the disk of the fore wings, the first five pale; and a whorl of seven spots in the disk of the hind wings, all pale.

Expanse of wings, ♂ ♀ $1\frac{1}{2}$ inch.

In coll. C. Swinhoe.

Group 8. Type *Teracolus interruptus*, Butler.

13. TERACOLUS XANTHUS, n. sp. (Plate XXXIX. ♂ ♀, figs. 10 & 11.)

Between Berber and Khartoum (*Petherick*).

♂. Marked like *T. galanthus*, Butler, the outer macular band on the hind wings above being single, instead of double as in that species.

Below pale primrose, the basal half of fore wings and apex yellow, with a faint orange band crossing the latter; a black-brown spot on the interno-median interspace, corresponding to the end of the band on the inner margin above, a faint spot at the end of the cell. Hind wings with a spot at the end of the cell, on a saffron-yellow ground; basal third of costa same colour.

♀. Antennæ black; body, head, and general colour of wings above primrose; apical patch reddish brown, inner border irregular and toothed on the veins, and diffused with pale brownish orange. Hind wings with a reddish brown macular border. Below marked as

in the male, the yellow on the fore wings suffusing the wing throughout, and the entire surface of the hind wings deepened to saffron-colour.

Expanse of wings, ♂ $1\frac{4}{10}$, ♀ $1\frac{1}{2}$ inch.

In coll. B. M.

14. Teracolus yerburii, n. sp. (Plate XXXIX. ♂, fig. 12.)

Haithalkim near Aden, March 1883.

♂. Near *T. daira*, Klug. Is, however, quite distinct, differing from both the plates and the description in having the base of all the wings deeply irrorated with black-brown, which extends in the form of a deep band along the inner margin of the fore wings to the black spot on the interno-median interspace. In the hind wings by having a large black-brown spot on the costa corresponding to the spot on the fore wings, which also forms a limit to the basal irrorations, the irrorations on this wing covering the entire basal third.

Expanse of wings, $1\frac{6}{10}$ to $1\frac{4}{10}$ inch.

In coll. C. Swinhoe.

Group 8*a*. Type *Teracolus liagore*, Klug.

15. Teracolus saxeus, n. sp. (Plate XL. ♂ ♀, figs. 1 & 2.)

Haithalkim, near Aden, March 1883.

Near *T. liagore*, Klug.

♂. Differs above in having the base powdered with black-brown, in having a smaller apical patch, and in having the outer black-brown border thicker and dentated, and with the lines running halfway through the patch on the veins.

Below it differs in having a black spot on an orange ground at the end of the discoidal cell in the hind wings, and the inner half of the costa of the same colour; whereas in *T. liagore*, both in Klug's plate and in the only specimen in the British Museum, the hind wing below is immaculate.

♀. Has the apex of the fore wings more rounded; otherwise above and below it is similar to the male, but with all the colours paler.

Expanse of wings, ♂ ♀ $1\frac{4}{10}$ to $1\frac{3}{10}$ inch.

In coll. C. Swinhoe.

Klug's plate of the female of *T. liagore* is undoubtedly a mistake: the insect therein represented does not belong to this group at all, but is a male of the *T. daira* group.

16. Teracolus odysseus, n. sp. (Plate XL. ♂, f. 3.)

White Nile (*Petherick*).

Allied to *T. glycera*, Butler.

♂. Without the deep band on the inner margin of fore wings, with the black outer border of the apical patch deeper, and with an inner band interrupted above the middle; and in the hind wing in having the black macular border less pronounced.

♀. Much resembles a faded female of *T. glycera*; the apical